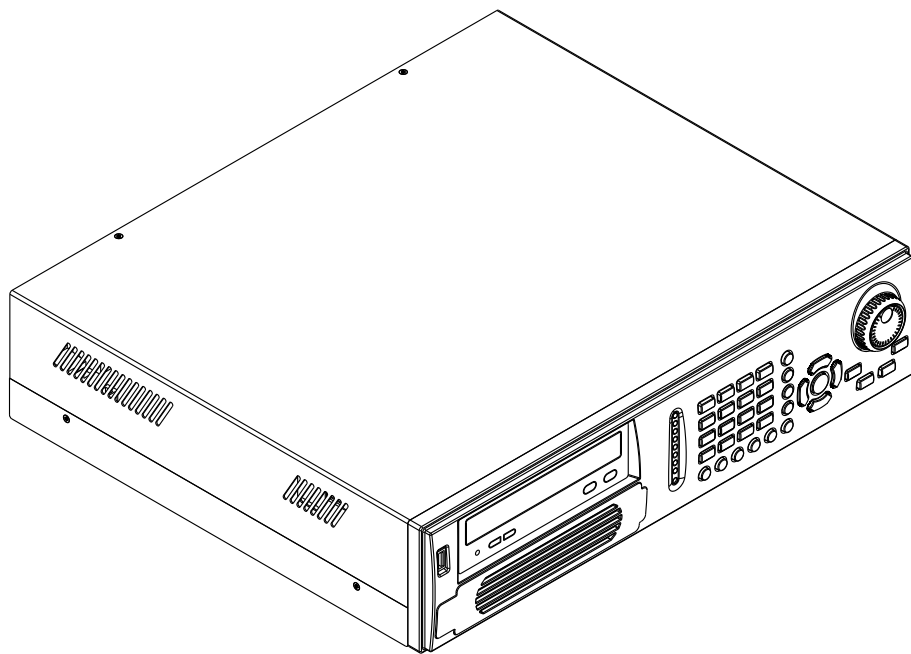


# **16CH & 9CH**

Embedded Digital Surveillance System



封面裡空白

## SAFETY



### WARNING

- ▶ Please keep this unit away from humidity, sunshine or hazard condition while installation. Poor efficiency, electricity leakage or a fire could result from the mistake.
- ▶ Wet hand on the power supply devices causes electricity shock or even a fire.
- ▶ Twisted power cord or something heavy on the power cord causes electricity shock or even a fire.  
Torn or naked power cord causes electricity shock or even a fire.
- ▶ Sharing electricity socket with other electrical device causes electricity shock or even a fire.
- ▶ Please call your local dealer for repairing work.
- ▶ Chassis open or unexpected touch on the components in side causes electricity shock or even a fire.



### CAUTION

- ▶ Uneven platform causes poor efficiency or function error.  
Rocking this unit while recording causes unit damaged or
- ▶ HDD damaged.



### 注 意

check the incoming power  
prior to system reboot



## ! Content check

Open the box at the clean and even place. And read user manual thoroughly before you install.

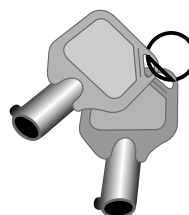
- Contents**
- |                          |                  |
|--------------------------|------------------|
| ▶ DVR main frame         | ▶ HDD Key        |
| ▶ software CD and Manual | ▶ Power cord set |

9ch

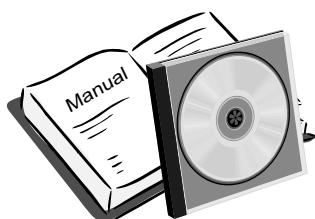
16ch



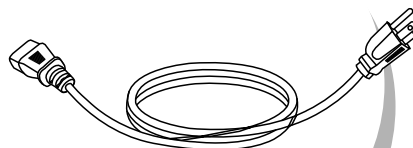
DVR mainframe



Hdd Key  
(only with HDD rack)



Software CD / Manual



Power cord set



## CONTENT

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## 1



## 16CH Specifications

Video Format	NTSC	PAL
Video Input	16 Input / 1V p-p / 75 Ohm / BNC	
Audio Input	1 Input / RCA	
Video Output	16 Loop / BNC , 2 Composite / BNC	
Audio Output	1 Output / RCA Display Mode	
Display	Full Screen , 4/8/9/13/16 Division , Sequential Switch	
Display Resolution	720 x 480	720 x 576
Record Resolution	720 x 240	720 x 288
Compression	Normal: 13~17KB	Normal: 15~19KB
Rate	Noise: 20~25KB	Noise: 22~27KB
Record Speed	Max. 120 fps	Max. 100 fps
Compression Algorithm	Modified M-JPEG	
OS	Embedded Linux	
Triplex	Recording / Playback / Network	
Recording Mode	Time / Manual / Schedule / Event	
Schedule Recording	Daily / Four Section	
Status Indicator	Power/Record/Playback/Network/USB/Zoom/Freeze/Lock	
Event Mode	Sensor & Motion Detection	
	Recording Duration: 10 ~ 99 Second	
Alarm Connect	16 Sensor / Relay ( N.O. / N.C. )	
Playback	Normal: x1	
	FF: x2 / x4 / x8 / x16	
	FR: x2 / x4 / x8 / x16	
	Frame by Frame: forward / Reverse	
	Time Search / Event Search / Manual Search	
Network Protocol	TCP/IP & DHCP	
Communication Protocol	RS-485	
HDD Type	EIDE / ATA-66 / 3.5 inch / 7200rpm	
HDD Management	Format Automatically	
P/T/Z Control	RS-485 Interface	
Archiving	USB 2.0( USB1.1 included ) , CD-R/W ( Option )	
Firmware Update	Via USB2.0 Memory Stick	
Tri-Lingual	English / Chinese / Others(Customized)	
Control Mode	Front Panel / Remote Control / Keyboard(Optional)	
Network Control	NetViewer (PC Software)	
Network Function	Live Play / Event List Play	
	/USB Memory Stick Play / CD Play / PTZ Control	
Power Supply	AC I/P VOL: AC115V/AC230V~ CUR: 4/2A MAX.	
	FREQ: 50~60Hz	
Dimension	43 ( W ) x 37 ( D ) x 9.6 ( H ) cm (Standard 2U Chassis)	
Weight	Approximately 8 kg (HDD Exclusive)	
Ambient Temperature	5°C ~ 40°C	

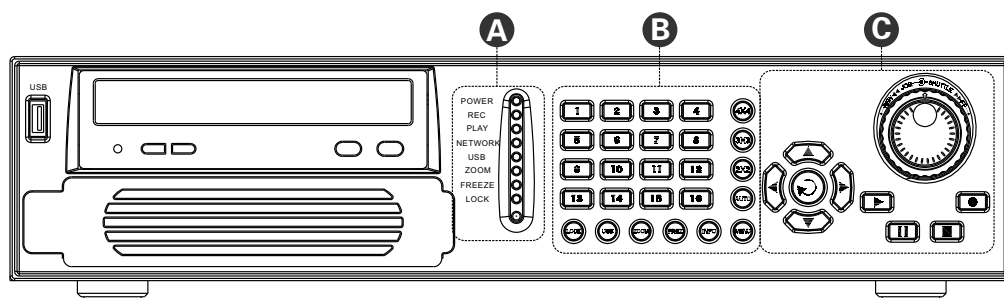
**9CH Specifications**

Video Format	NTSC	PAL
Video Input	9 Input / 1V p-p / 75 Ohm / BNC	
Audio Input	1 Input / RCA	
Video Output	8 Loop / BNC , 2 Composite / BNC	
Audio Output	1 Output / RCA Display Mode	
Display	Full Screen , 4/9 Division , Sequential Switch	
Display Resolution	720 x 480	720 x 576
Record Resolution	720 x 240	720 x 288
Compression	Normal: 13~17KB	Normal: 15~19KB
Rate	Noise: 20~25KB	Noise: 22~27KB
Record Speed	Max. 60 fps	Max. 50 fps
Compression Algorithm	Modified M-JPEG	
OS	Embedded Linux	
Triplex	Recording / Playback / Network	
Recording Mode	Time / Manual / Schedule / Event	
Schedule Recording	Daily / Four Section	
Status Indicator	Power/Record/Playback/Network/USB/Zoom/Freeze/Lock	
Event Mode	Sensor & Motion Detection	
	Recording Duration: 10 ~ 99 Second	
Alarm Connect	9 Sensor / Relay ( N.O. / N.C.)	
Playback	Normal: x1	
	FF: x2/ x4 / x8 / x16	
	FR: x2 / x4 / x8 / x16	
	Frame by Frame: forward / Reverse	
	Time Search / Event Search / Manual Search	
Network Protocol	TCP/IP & DHCP	
Communication Protocol	RS-232 , RS-485	
HDD Type	EIDE / ATA-66 / 3.5 inch / 7200rpm	
HDD Management	Format Automatically	
P/T/Z Control	RS-485 Interface	
Archiving	USB 2.0( USB1.1 included) , CD-R/W ( Option)	
Firmware Update	Via USB2.0 Memory Stick	
Tri-Lingual	English / Chinese / Others(Customized)	
Control Mode	Front Panel / Remote Control / Keyboard(Optional)	
Network Control	NetViewer (PC Software)	
Network Function	Live Play / Event List Play	
	/USB Memory Stick Play / CD Play / PTZ Control	
Power Supply	AC I/P VOL: AC115V/AC230V~ CUR: 4/2A MAX.	
	FREQ: 50~60Hz	
Dimension	43 ( W)x37 ( D)x9.6 ( H) cm (Standard 2U Chassis)	
Weight	Approximately 8 kg(HDD Exclusive)	
Ambient Temperature	5°C ~ 40°C	

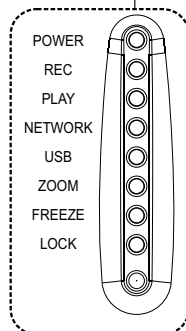
2



## 16CH Front Panel

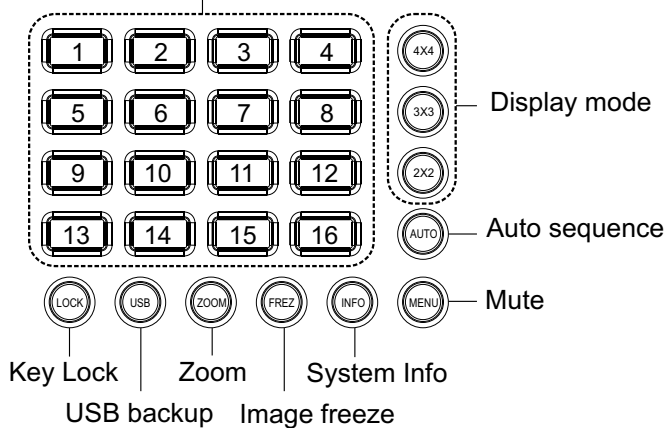


A LED

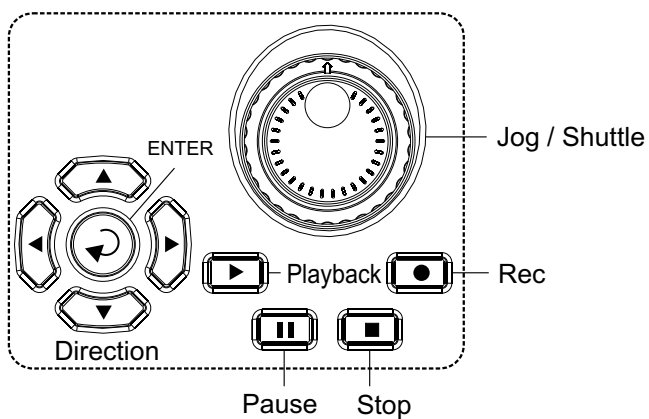


B

Camera NO.



C





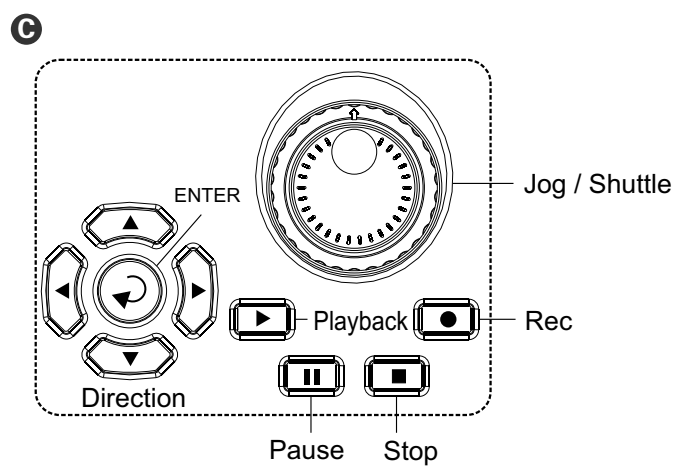
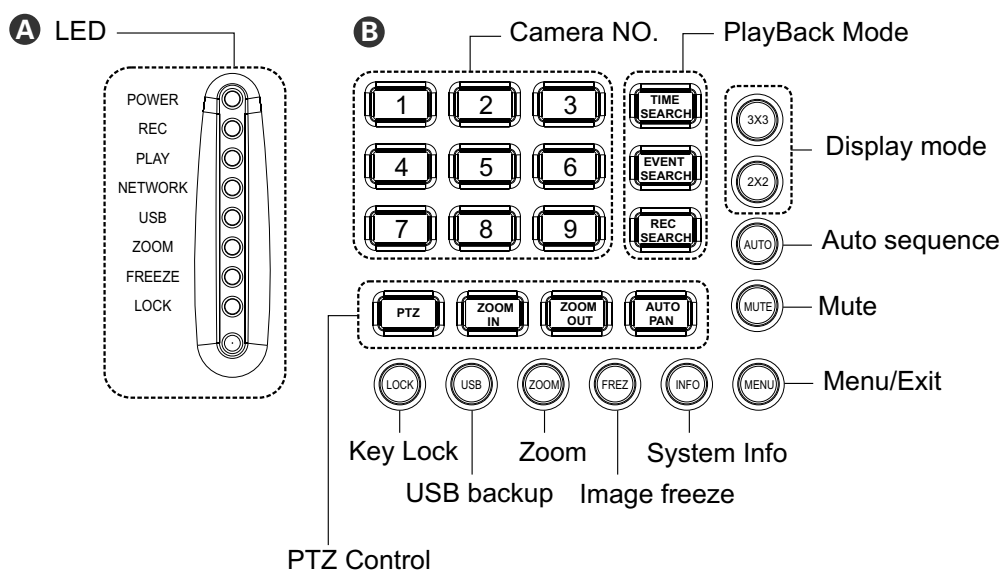
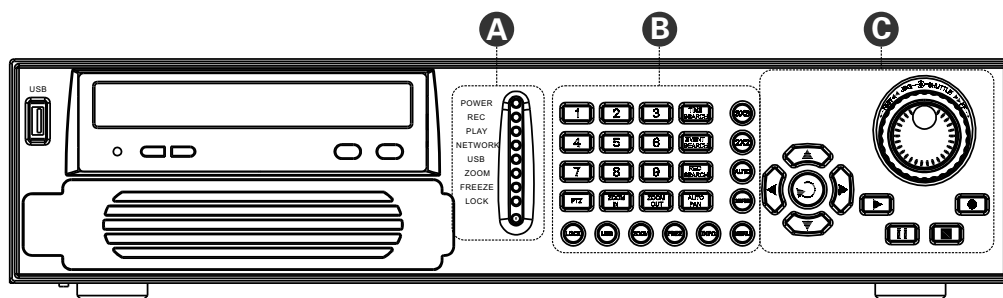
**16CH Front Panel**

LED Indicator	Power/Record/Playback/Network/USB/Zoom/Freeze/Lock
Camera NO	Full screen given in condition of recording & playback
Display Mode	Enables various display division. Double clicks for rest of the channels in the same display division.
AUTO	Single channel sequential switch
	Duration of a stay and the channel selected available
	★Quadrant display (2×2) sequential switch available
MENU	The button to enter MENU
	“Save” & “Exit” in condition of setting an option
INFO	Access to system information (firmware version)
FREEZ	Freezes the full screen picture
	In split mode hit the freeze button and select the single channel accordingly
ZOOM	1.Hit this button to get a white block
	2.Move the white block to the spot for zoom in
	3.Hit this button again to zoom in the image
USB	Hit this button to start retrieving video streams
	Hit again to stop retrieving
	Turn to full screen for snapshot
	A hit for a still picture
	★Attention : system error results from memory stick removed in the run of video retrieving
LOCK	Hit this button to invalid other buttons.
	Hit again to unlock password required accordingly.
Jog/Shuttle	FF & FR(outer) , frame by frame(inner)
Record	Manual recording
Stop	Stops recording and playback
Pause	A pause in playback mode
	“Keypad lockup & monitor black-out” in recording mode
	Password required prior to unlock
Play	Starts playback procedure
Direction	Moves the cruiser or changes the option
Enter	Enter an option

★Read page 37 for [Password Authorization]



## 9CH Front Panel



**9CH Front Panel**

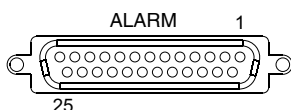
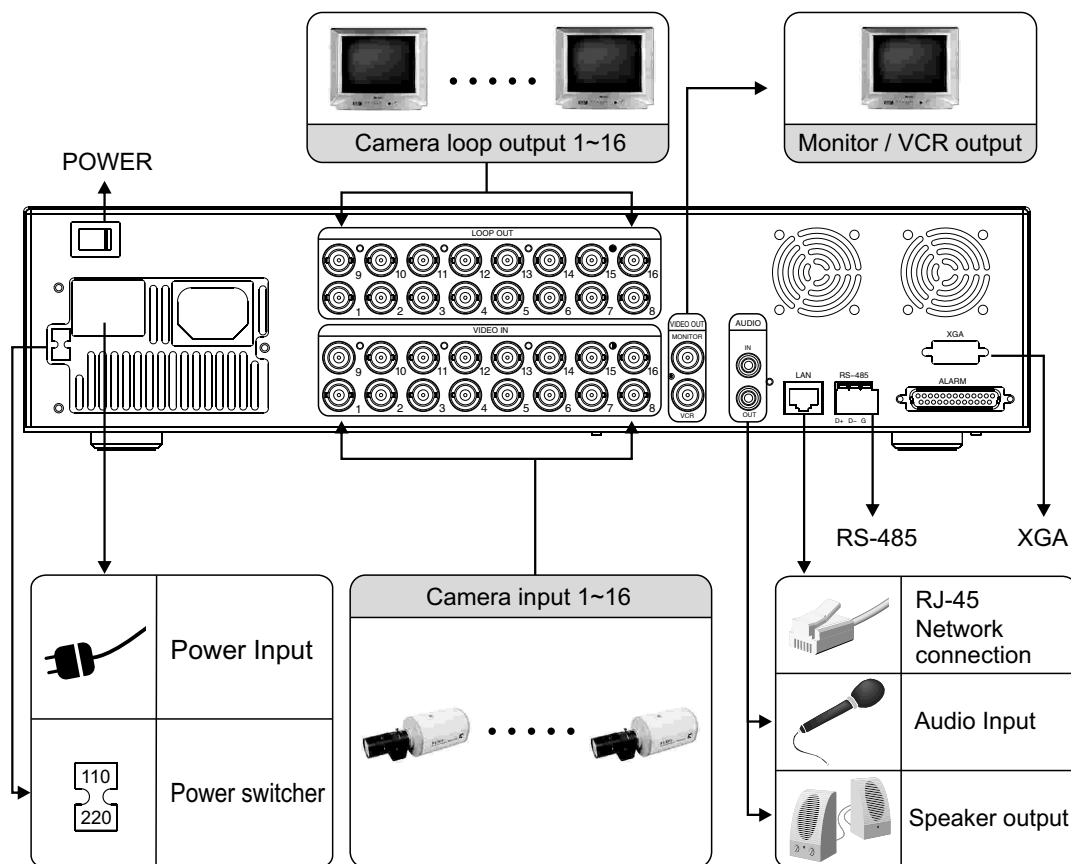
LED Indicator	Power/Record/Playback/Network/USB/Zoom/Freeze/Lock
Camera NO	Full screen given in condition of recording & playback
Display Mode	Enables various display division. Double clicks for rest of the channels in the same display division.
AUTO	Single channel sequential switch Duration of a stay and the channel selected available ★Quadrant display (2×2) sequential switch available
MENU	The button to enter MENU “Save” & “Exit” in condition of setting an option
INFO	Access to system information (firmware version)
FREZ	Freezes the full screen picture In split mode hit the freeze button and select the single channel accordingly
ZOOM	4.Hit this button to get a white block 5.Move the white block to the spot for zoom in Hit this button again to zoom in the image
USB	Hit this button to start retrieving video streams Hit again to stop retrieving Turn to full screen for snapshot A hit for a still picture ★Attention : system error results from memory stick removed in the run of video retrieving
LOCK	Hit this button to invalid other buttons. Hit again to unlock password required accordingly.
Jog/ Shuttle	FF & FR(outer) , frame by frame(inner)
Record	Manual recording
Stop	Stops recording and playback
Pause	A pause in playback mode “Keypad lockup & monitor black-out” in recording mode Password required prior to unlock
Play	Starts playback procedure
Direction	Moves the cruiser or changes the option
Enter	Enter an option
Play Mode	Time Search ---Play video files in time search mode Event Search --- Play video files from event list Rec Search --- play video files from manual recording list
Mute	Access to mute condition
PTZ Control	Hit PTZ to enter PTZ control mode Speed Dome & PTZ can be operated by navigator Zoom lens can be operated by the buttons zoon in & zoom out Auto Pan is the button to setup preset journey

★Read page 37 for [Password Authorization]

3



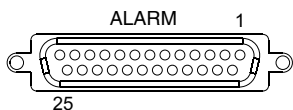
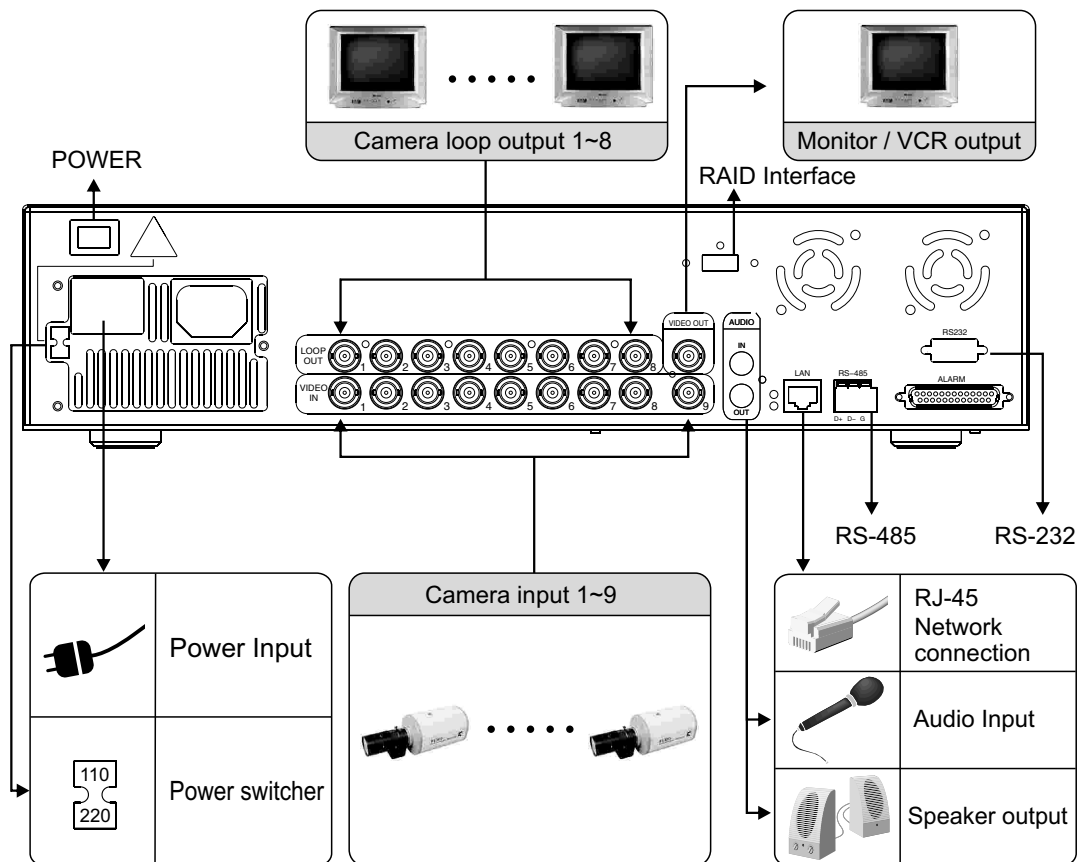
## 16CH Rear Panel



## Alarm sensor input / output (DB25)

- |                            |                              |                     |
|----------------------------|------------------------------|---------------------|
| 1、Sensor input of camera 1 | 10、Sensor input of camera 10 | 19、NUL              |
| 2、Sensor input of camera 2 | 11、Sensor input of camera 11 | 20、GND              |
| 3、Sensor input of camera 3 | 12、Sensor input of camera 12 | 21、Relay com output |
| 4、Sensor input of camera 4 | 13、GND                       | 22、Relay N.C output |
| 5、Sensor input of camera 5 | 14、Sensor input of camera 13 | 23、Relay N.O output |
| 6、Sensor input of camera 6 | 15、Sensor input of camera 14 | 24、GND              |
| 7、Sensor input of camera 7 | 16、Sensor input of camera 15 | 25、GND              |
| 8、Sensor input of camera 8 | 17、Sensor input of camera 16 |                     |
| 9、Sensor input of camera 9 | 18、NUL                       |                     |

## 9CH Rear Panel



### Alarm sensor input / output (DB25)

1 \ Sensor input of camera 1	10 \ N.C.	19 \ NUL
2 \ Sensor input of camera 2	11 \ N.C.	20 \ GND
3 \ Sensor input of camera 3	12 \ N.C.	21 \ Relay com output
4 \ Sensor input of camera 4	13 \ GND	22 \ Relay N.C output
5 \ Sensor input of camera 5	14 \ N.C.	23 \ Relay N.O output
6 \ Sensor input of camera 6	15 \ N.C.	24 \ GND
7 \ Sensor input of camera 7	16 \ N.C.	25 \ GND
8 \ Sensor input of camera 8	17 \ N.C.	
9 \ Sensor input of camera 9	18 \ NUL	



# 4 DVR MENU

## System Menu

<b>★ System Set(1)</b> ..... P11 <ul style="list-style-type: none"> <li>▣ Time/Date Set(1-1)             <ul style="list-style-type: none"> <li>◆ Date(1-1-1)</li> <li>◆ Time(1-1-2)</li> <li>◆ Format(1-1-3)</li> <li>◆ Display(1-1-4)</li> <li>◆ Local(1-1-5)</li> </ul> </li> <li>▣ HDD Format Set (1-2)</li> <li>▣ Factory Reset(1-3)</li> <li>▣ Video System(1-4)</li> <li>▣ Language(1-5)</li> <li>▣ Buzzer Sound(1-6)</li> <li>▣ Relay Enable(1-7)</li> <li>▣ Audio Sound(1-8)</li> <li>▣ Change Password(1-9)             <ul style="list-style-type: none"> <li>◆ Admin Password Change(1-9-1)</li> <li>◆ User Password Change(1-9-2)</li> </ul> </li> <li>▣ Firmware Update(1-10)             <ul style="list-style-type: none"> <li>◆ Update Method(1-10-1)</li> <li>◆ Update Start(1-10-2)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▣ Network Enable(4-5)</li> <li>▣ Video Port(4-6)</li> <li>▣ Command Port(4-7)</li> <li>▣ MAC ADDR(4-8)</li> </ul>
<b>★ Display Set(2)</b> ..... P13 <ul style="list-style-type: none"> <li>▣ Camera Name(2-1)</li> <li>▣ Color Set(2-2)             <ul style="list-style-type: none"> <li>◆ CON(2-2-1)</li> <li>◆ BRI(2-2-2)</li> <li>◆ HUE(2-2-3)</li> <li>◆ SAT(2-2-4)</li> </ul> </li> <li>▣ AutoSeq Set(2-3)</li> <li>▣ Bound Color(2-4)</li> <li>▣ Blank Color(2-5)</li> <li>▣ Quad Sequence(2-6)</li> </ul>	<b>★ Sensor Set(5)</b> ..... P16 <ul style="list-style-type: none"> <li>▣ Channel Select(5-1)</li> <li>▣ Alarm Enable(5-2)</li> <li>▣ Motion Enable(5-3)</li> <li>▣ Motion Level(5-4)</li> <li>▣ Motion Area Set(5-5)</li> <li>▣ Buzzer Time(5-6)</li> <li>▣ Sensor REC Time(5-7)</li> <li>▣ Alarm Screen(5-8)</li> </ul>
<b>★ Record Set(3)</b> ..... P15 <ul style="list-style-type: none"> <li>▣ Over Write(3-1)</li> <li>▣ REC Speed(3-2)</li> <li>▣ REC Quality(3-3)</li> <li>▣ PB Speed(3-4)</li> <li>▣ Record Ch Set(3-5)</li> <li>▣ Audio Select(3-6)</li> </ul>	<b>★ Schedule Set(6)</b> ..... P17 <b>★ Backup Set(7)</b> ..... P19 <ul style="list-style-type: none"> <li>▣ USB Backup(7-1)</li> <li>▣ Backup Mode(7-1-1)</li> <li>▣ USB Information(7-1-2)</li> <li>▣ Copy PC Application(7-2)</li> <li>▣ CD_RW Backup(7-3)</li> </ul>
<b>★ Network Set(4)</b> ..... P20 <ul style="list-style-type: none"> <li>▣ IP ADDR(4-1)</li> <li>▣ Sub Net(4-2)</li> <li>▣ Gateway(4-3)</li> <li>▣ IP Mode(4-4)</li> </ul>	<b>★ Storage Info(8)</b> ..... P29 <b>★ PTZ Set(9)</b> ..... P14 <ul style="list-style-type: none"> <li>▣ Channel Select(9-1)</li> <li>▣ Device ID(9-2)</li> <li>▣ Preset Adjust(9-3)             <ul style="list-style-type: none"> <li>◆ Preset Select(9-3-1)</li> <li>◆ Adjust Pos(9-3-2)</li> <li>◆ Save Preset(9-3-3)</li> <li>◆ Clear Preset(9-3-4)</li> <li>◆ Clear All Presets(9-3-5)</li> <li>◆ Return Tour Time(9-3-6)</li> </ul> </li> <li>▣ Fast Dome Type(9-4)</li> <li>▣ Protocol(9-5)</li> <li>▣ Baudrate(9-6)</li> <li>▣ Pan/Tilt Speed(9-7)</li> </ul>
	<b>Playback Menu</b> ..... P18 <ul style="list-style-type: none"> <li>★ Direct Play(10) ..... P18</li> <li>★ Time Search(11) ..... P18</li> <li>★ Select Event List(12) ..... P18</li> <li>★ Select Record List(13) ..... P18</li> </ul>



## 5

**Initialization****● Power Supply**

Use the power cord provided by the DVR supplier in the package to connect the power supply (AC100V~AC230V) see Page.11(Page.12) °

**● Connect BNC of Cameras to BNC of DVR**

Coaxial cable cat6 or above in use

**● DVR Network Cabling**

Please connect HUB or Router to the TCP/IP port with RJ-45 connector.  
This DVR is static IP & DHCP support details read Page 20.


**● Alarm I/O**

Alarm I/O DB25(25PIN) details read Page 11(P.12) °  
Alarm I/O details read Page16.

**● Speed Dome Camera**

Pelco D, Pelco P & NIKAMI protocol available  
PTZ setup details read Page 14.


**● Start up**

Push the switch on the rear panel upon DVR ready for start up.  
Hit  MENU and input password to enter menu.



★Read page 37 for [Password Authorization]

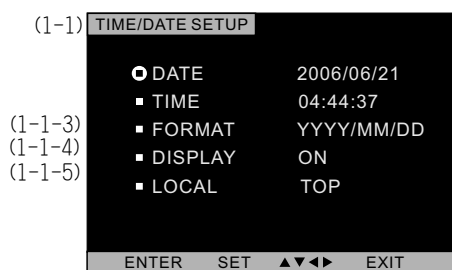
## 6


**System Set**

Hit  MENU to enter menu. Select [System Set(1)] for system setting.  
Look up 4. [ Menu ] for the menu directory.

**Time/Date Setup**


1. Enter [Time/Date Set(1-1)] .Hit  buttons to select the option. Hit  buttons to change setting. Setting change invalid in recording status.
2. Different format as follows [Format(1-1-3)] :yyyy/mm/dd 、mm/dd/yyyy 、dd/mm/yyyy.
3. Time on screen display when [Display(1-1-4)] ON , not on screen display when OFF.
4. [Local(1-1-5)] is the location of Time/Date display "Top" & "Bottom" available.

**HDD Format Set**

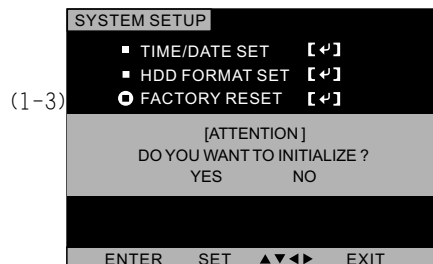
Select [HDD Format Set(1-2)] hit  shows up a question. Select "yes" to clear all data, otherwise select "No".

※ It is impossible to undo HDD format.

**Factory Reset**

Select [ Factory Reset(1-3)] hit  to get back default setting if "Yes" selected.  
Select "No" to remain the working setting.

※ Details please read "Default Setting".






### ● Video System

Select [Video System (1-4)] hit  to change NTSC/PAL.

### ● Language

Select [Language(1-5)] hit  to change language on screen display.

### ● Buzzer

Select [Buzzer Sound(1-6)] hit  to enable/disable the buzzer.

### ● Relay Enable

Select [Relay Enable(1-7)] hit  to enable/disable the relay device.  
Please read page 18 for DB5 Cabling study.

※Enter [Sensor Setup(5-1-1)] to setup the sensor.

### ● Audio Sound

Select [Audio Sound(1-8)] hit  to enable/disable audio.

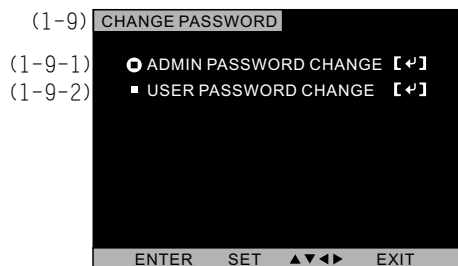
※Only single channel audio output/input available.

### ● Change Password

Enter [Change Password(1-9)] two options [Admin Password Change(1-9-1)] & [User Password Change(1-9-2)] available. Select either of them and input password, new password and new password again to confirm the change.

※Details read [Password Authorization]

Admin Password Change (1-9-1)

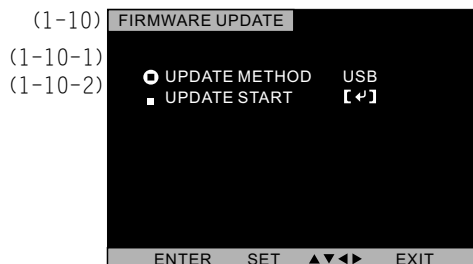


### ● Firmware Update


Put the update firmware in a memory stick directory X:\Firmware. 'X' is the USB disk name given by Windows OS. Put the memory stick in the USB port and accordingly enter [Firmware Update(1-10)] hit [Update Start(1-10-2)] .

Select "Yes" to start update. "No" to stop proceeding.

※USB port is the only way for firmware update. Please do not remove memory stick while firmware updated. DVR must reboot after firmware update. To prevent from system error, run factory reset before use.




## 7 Display Setup





Hit  to enter Menu. Select 【Display Set(2)】 to setup display of each channel.  
Look up 4. 【 Menu 】 for the menu directory.

### ● Camera Name

Enter 【Camera Name (2-1)】 to setup the name on screen display.



Hit  on the channel to setup for. There is a library of alphabets and symbols at the bottom for camera name setup maximum 6 bits.

### ● Color Set



Enter 【Color Set(2-2)】 to adjust contrast, brightness, hue and saturation. Hit   to change option. Hit   to increase/decrease the volume. Picture changes upon setting change.

### ● AutoSeq Set

【AutoSeq Set(2-3)】 & 【Quad Sequence(2-6)】 both available. Details read 2. 【Front Panel】 (P.6) °

1. Enter 【AutoSeq Set(2-3)】 to setup single channel auto sequence. Maximum duration up to 99 seconds. By pass in condition of 0 second. 02 second is the default setting.
2. Select 【Quad Sequence(2-5)】 hit   to select duration of the quad sequence maximum 99 seconds minimum 01 second default 02 seconds.

### ● Bound Color & Blank Color

Select 【Bound Color(2-4)】 or 【Blank Color(2-5)】 hit   to setup color of margin lines of blue/white or color of the background blue/black.

## 8

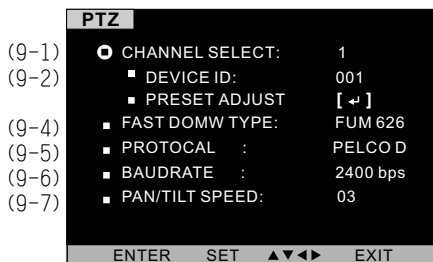


## PTZ Setup & Operation

Be aware of the speed dome specifications and setting prior to setting [PTZ (9)] in MENU. Look up 4. [ Menu ] for the menu directory.

### PTZ setting

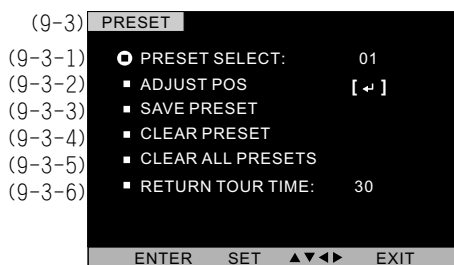
1. Select the number of the speed dome from [Channel Select(9-1)] and select [Device ID(9-2)] accordingly.
2. Setup [Fast Dome Type(9-4)] first and setup [Protocol(9-5)] accordingly. Finish [Baudrate(9-6)] setup to start Speed Dome Operation.
3. [Pan/Tilt Speed(9-7)] default 03 range 01(slow) ~ 05(fast) °



### PTZ Operation

Can start preset journey setup upon above setting finished.

1. Enter [Preset Adjust(9-3)] to select number of [Preset Select(9-3-1)] .
2. Enter [Adjust Pos(9-3-2)] to preset the positions of every stop of the journey via remote control navigator and PTZ control button. 9ch unit is also available in the same setting on the front panel.
3. Back to [Preset Adjust(9-3)] by a hit on and select [Save Preset(9-3-3)] to finish setting.
4. Select [Clear Preset(9-3-4)] to clear a preset. Select [Clear All Preset(9-3-5)] to clear all presets.
5. Select [Clear Preset(9-3-4)] to set the time that PTZ is not controlled for back to Tour mode.




6. Hit the button next right hand side to the button "Auto Pan" to enter PTZ control mode. The navigator and the PTZ control button both are for PTZ control.



"Auto Pan" is the button to enable the speed dome moving at the command of the presets.



## 9 DVR Recording Setup


Hit  to enter menu. Select [Record Set(3)] to setup recording. Look up 4. [ Menu ] for the menu directory.

### ● Over Write


Select [Over Write(3-1)] hit  to either overwrite or not.

※ Attention: It is impossible to undo overwritten data.

### ● REC Speed & Quality

Select [REC Speed(3-2)] hit  to setup recording speed. 60 fps is the default setting. The more frame rates, the fluently image movement. Larger frame rates bring up with larger video file size to decrease recording time. Please review 18. [ Record Time ] for the recording time preview.

※ CIF mode NTSC : [REC Speed(3-2)] 120fps (PAL : 100fps) cannot work with [Record CH Set] . CIF is not available in 9ch DVR.




Select [REC Quality(3-3)] hit  to adjust recording quality. Range 01(poor) ~ 09(high) default 03. The more REC Quality DVR comes with, the better resolution provides with. On the other hand, more REC Quality consumes more HDD capacity. Details read 18. [ Record Time ] .

### ● Playback Speed


Select [PB Speed(3-4)] hit  to setup playback speed default automatically.

※ Attention: Playback will become fast forward if the speed of [REC Speed(3-2)] and [PB Speed(3-4)] not the same. Please setup both speed same or Auto for normal playback speed.

### ● Record Channel Set

Enter [Record Ch Set(3-5)] hit  to select channel. Hit  to setup enable or disable of the button  default enable for all.

### ● Audio Select

Enter [Audio Select(3-6)] hit  to select the audio recorded channel. Audio will be recorded with the video stream at the same time. The channel will be given with a yellow spot.

## 10



## Recording Operation

This DVR is available in recording modes of manual recording, sensor & motion recording & schedule recording. Look up 4. [ Menu ] for the menu directory.

### Manual Recording

Hit the button to start recording this is manual recording.

1. Hit the button to start recording the video stream to HDD. A red spot comes up to release the message of being recording.

2. Hit stop button to stop recording.

Input password if requested.



### Sensor & motion Recording

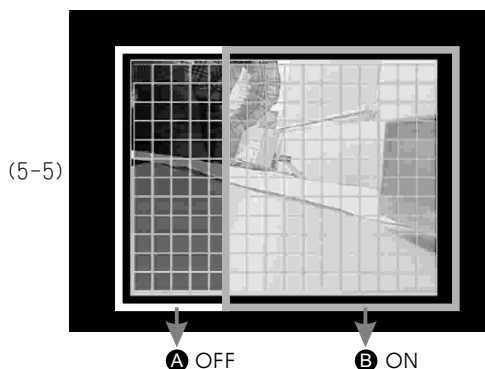
Hit and select [Sensor Setup(5)] to setup sensor recording.

1. Select [Channel Select(5-1)] hit to select camera number and setup [Alarm Enable(5-2)] , [Motion Enable(5-3)] , [Motion Level(5-4)] and [Motion Area Set(5-5)] accordingly.

2. Sensor Recording: Select [Alarm Enable(5-2)] hit to setup external sensor (Normal Open, Normal Close & OFF). Setup **N.C./ N.O.** to work with external sensor device. On screen display pops up with an "M" upon sensor triggered. It comes up with prompt recording, buzzer and screen display.


3. Motion Recording: Select [Motion Enable(5-3)] hit to setup motion detection. On screen display pops up with an "M" upon motion detected. It comes up with prompt recording, buzzer and screen display.




4. [Motion Level(5-4)] sensitivity available in 01(low) ~ 09(high). Enter [Motion Area Set(5-5)] hit to select the initial area. Hit to select area. (yellow - enable/clear - disable) Hit to enable/disable motion area. Hit to exit [Motion Area Set(5-5)] and finish setting.






5. Beeping duration, 1 second to 99 seconds, is determined by [Buzzer Time(5-6)] default 05 second. Sensor recording time, default 10 seconds, is determined by [Sensor REC Time(5-7)] range 10 seconds to 99 seconds. Enable [Alarm Screen (5-8)] to provide full screen display on the alarm triggered camera.

#### ● Schedule Recording

Hit  select [Schedule Setup(6)] to setup schedule recording four sections a day.

1. Enter [Schedule Setup(6)] hit  to select ON/OFF, START, END, T/M (footnote 1) & FPS. Hit  to change selection. Hit  to exit and finish setting.

2. "S" pops up upon setting finished. A hit on the button  is not possible to stop schedule recording.

3. In condition of non-recording of schedule recording hit  to start emergency manual recording. Hit  to stop manual recording in this case.

4. Priority of the schedule recording --- 1 > 2 > 3 > 4 Top priority schedule runs the recording command prior to other priority schedule. For example --- Schedule 1 (00:00 ~ 06:59) runs first prior to 2(00:00 ~ 20:59).

(6)

		START	STOP	T/M	FPS
	1 ON	00:00 ~	06:59	T	30
	2 ON	00:00 ~	20:59	T	60
	3 ON	21:00 ~	23:59	M	60
	4 OFF	__:__ ~	__:__	-	__

ENTER SET ▲▼◀▶ EXIT

Footnote 1 :


T : starts recording according to Start/end time.

M : In the range of start/end time DVR starts motion recording or sensor recording in condition of setting ON motion recording or sensor recording.

# 11





## Playback

DVR provides four playback features: direct play, play time select, record event list & manual record list. Hit  to enter playback sub menu.  
Look up 4. [ Menu ] for the menu directory.






### ● Direct Play

Select direct play to retrieve the initial video files.

- 1.Hit  to enter playback sub menu and select [direct play(10)] to start playback.
- 2.DVR starts retrieving initial video files of the HDD.
- 3.FF/FR speed up to x16. (footnote 2) Hit  to stop playback.





### ● Play Time Select

Select play time select to retrieve video files by time.

- 1.Hit  to enter playback sub menu. Select [Play Time Select(11)] to search by time. Hit  to select year/month/day/hour/minute/second. Hit  to select digit.
- 2.Only search video files from the time in the range of the red bar  Recorded video files cannot be found beyond the red bar.
- 3.FF/FR speed up to x16. (footnote 2) Hit  to stop playback





### ● Record Event List

Select record event list to retrieve video files recorded by event list.

- Hit  to enter playback menu. Select [Record Event List(12)] to get into event list.  
Hit  to select event. Hit  to enter playback.
- 1.FF/FR speed up to x16. (footnote 2) Hit  to stop playback.

### ● Manual record List

Select manual record list to retrieve the video files recorded by manual recording.

- 1.Hit  to enter playback sub menu. Select [Manual Record List(13)] to get the manual record list. Hit  to select manual record list. Hit  to start playback.
- 2.FF/FR speed up to x16. (footnote 2) Hit  to stop playback.
- 3.Manual recording creates a record in manual record list. System builds up list record at 00:00/04:00/08:00/12:00/16:00/20:00. Suppose DVR starts recording at 07:30 until 19:30. List record 07:30-08:00 、 08:00-12:00 、 12:00-16:00 、 16:00 -19:30 will be found.

Footnote 2 : Outer ring of the shuttle is for quick search. Inner ring of the shuttle is for slow search.

## 12



## Video Files Backup



DVR provides USB backup & CD-RW backup. Remote backup instruction will be available 14. [ NetViewer ] .Look up 4. [ Menu ] for the menu directory.

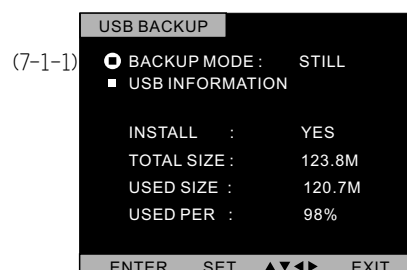
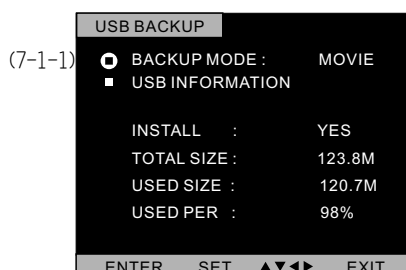
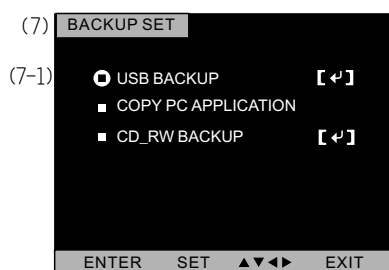
### ● USB backup




Live images or recorded video can be saved a backup files in USB memory stick.



It is possible to backup movie and snapshot video.

Please follow the procedure below to backup video.

- 1.Hit  to enter menu. Select [Backup Set(7)] [USB Backup(7-1)] [Backup Mode(7-1-1)] for movie and snapshot modes. Hit  to finish setting and exit.





- 2.Insert a memory stick in the USB port and hit the button USB to start saving video to memory stick.
- 3.Hit [USB] to start movie backup. The icon  comes up. Hit [USB] again to stop. Do not remove the memory stick until the icon  gone.
- 4.Select single channel and hit [USB] to start snapshot backup. Do not remove the memory stick until the icon  gone.

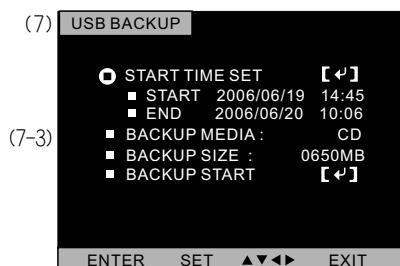
★Attention: System will be in big wrong if user removes memory stick while  or  on screen display.

### ● CD-RW Backup

There are two ways to backup video via CD-RW.

By Time: hit  to enter menu. Select [Backup Set(7)] hit the button enter for [CD\_RW Backup(7-3)] . Select the start time and insert disk in the CD drive to start backup.

By MB: Hit  to enter menu. Select [Backup Set(7)] hit the button enter to [CD\_RW Backup(7-3)] Select the MB and insert disk to CD drive to start.



✳Hit [USB] to format CD\_RW disk before backup.



# 13



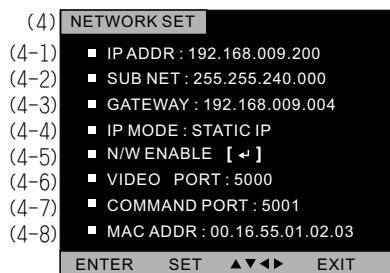
## Network Setup

Hit to enter menu. Select [Network Setup(4)] to setup network. Remote user can download user manual and netviewer through IE browser. Also can remote access to DVR via netviewer.

Look up 4. [ Menu ] for the menu directory.

### ● Network Setup

Two [IP Mode(4-4)] (footnote 3): "Static IP" & "DHCP". Static IP setting requires [IP ADDR(4-1)] 、 [Sub Net(4-2)] 、 [Gateway(4-3)] . DHCP does not require above settings. Hit to exit. Enter [Network Setup(4-5)] to setup the authorized channels on netviewer. [Video Port(4-6)] default 5000. [Command Port(4-7)] default 5001. There are twenty options of [Video Port(4-6)] & [Command Port(4-7)] available. [MAC ADDR(4-8)] is the only MAC address not alternative.



❖ IP ADDR, Sub Net & Gateway : hit to increase/decrease the digits or hit and to select particular digits. 255 is the maximum. Hit finish setting.

Footnote 3 : Please contact your ISP for [IP Mode(4-4)] details.

### ● Operation

User manual & netviewer software can be downloaded via IE browser upon setting finished. Please read 14. [ NetViewer ] for remote access details.

## 14



## NetViewer

### ● Introduction


Network Viewer makes it possible to remote access, playback & backup video remotely.

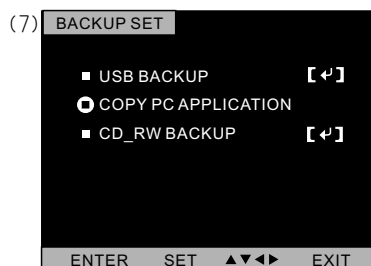
### ● System Requirement

OS : Windows 2000 or above

### ● Software Retrieving & Installation

#### ➤ Retrieving software via USB from DVR

Insert memory stick in the USB port of the DVR. Hit  enter 「Backup Set(7)」 :



select 「Copy PC Application」 NetViewer.exe, NVP3000\_DLL\_MMX.DLL & WNASPI32.DLL will be saved in memory stick.

Copy NetViewer.exe, NVP3000\_DLL\_MMX.DLL & WNASPI32.DLL to a same file clip on the PC run NetViewer.exe to start software.

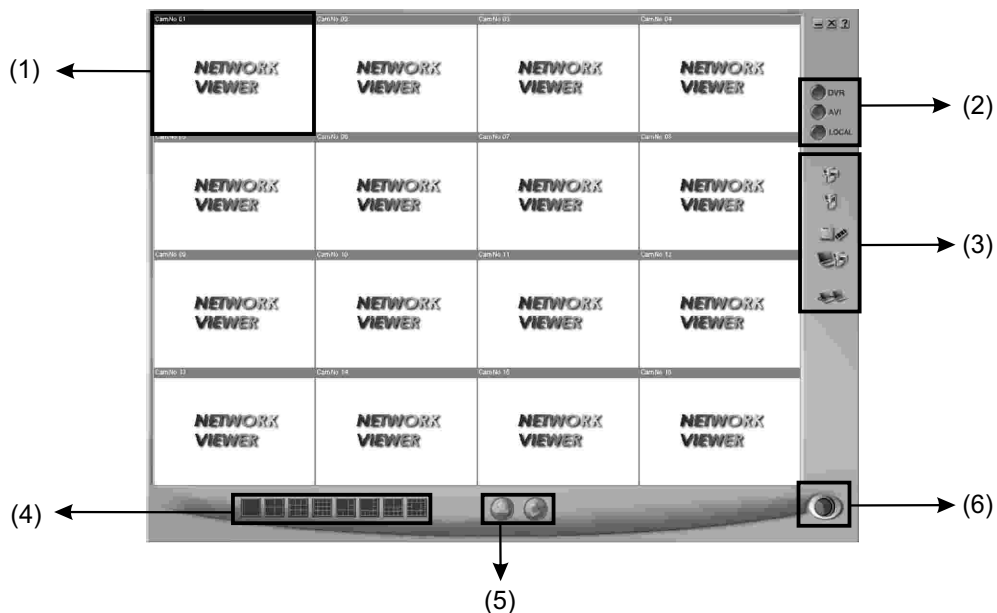
#### ➤ Retrieving via IE Browser

Access DVR IP via IE browser picture comes up as follows.



Hit NetViewer to download netviewer.exesoftware. PC creates an icon on the desk after installation. Hit the icon to start the software.

## User Interface



### (1) Video Display Area

Remote video comes up to this area in different division split subject to different setting.

### (2) Status Indicator



: it lights up when recording.



: it lights up while AVI backup.



: it lights up when saving video to PC.



### (3) Buttons

	Play from Network	Start Live View
	Pause	Stop Live View
	Save as AVI	Converting Video to AVI
	Save Video Stream to PC's HDD	Backup video to PC
	Connect to the DVR	Connected with DVR
	Disconnect to the DVR	Disconnected DVR

## (4) Division Split Option



## (5) Playback Area

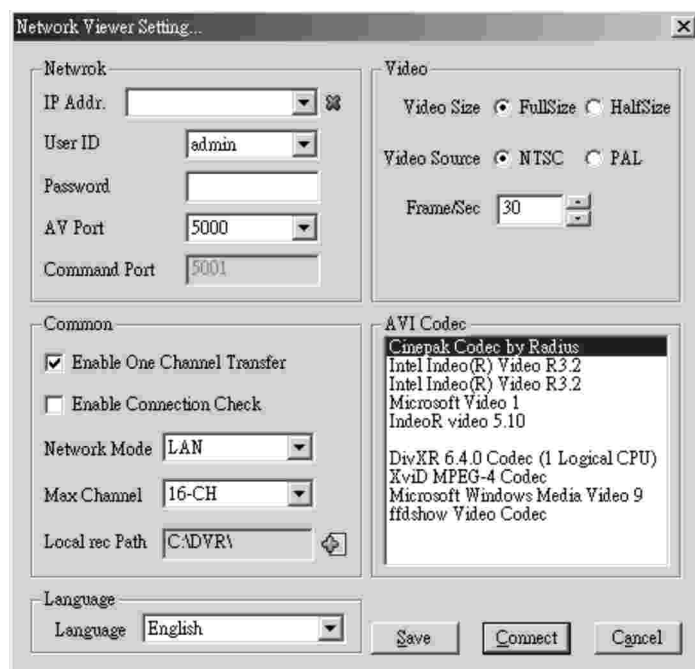
	ScanDisk	Select this option to read the video stream in cd-r
	FilePlay	Select this option to play the video stream in memory stick or PC

## (6) Close Netviewer System



the button for exit


## Network Setup

Hit  to enter Netviewer Setup

- Network → setup 「IP Addr」 first and select 「AV Port」. Input 「User ID」 and 「Password」 hit connect to start connecting.
  - ⊛ Attention : system provides one user ID "admin" and another two user ID "guest" remote access to this DVR at the same time.
- Common
  - 「Enable One Channel Transfer」 enables single channel transmission. Better disable this while video backup.
  - 「Enable Connection Check」 checks IP address automatically.
  - ⊛ Attention: 「IP Addr」 will be no response from time to time. This option is not suggested to select.
  - 「Network Mode」 as follows



Local	「PC to DVR」 faster than LAN transmission
LAN	Intranet transmission up to 30 frames/ sec.
WAN	Internet transmission 1-3 frames / sec.

- ➡ 「Max Channel」 enables maximum channels setting.
- ➡ 「Local rec Path」 this makes  saving video to PC HDD in the directory.

#### ■ Language

「Language」 optoin

#### ■ Video


Can setup video size of the AVI files, video format & frame per second.

- ★ Attention: 「Video Size」 setting makes AVI images full size or half size.  
30 frames per second is the maximum speed.

#### ■ AVI Codec

Select Codec for the converted AVI files.

#### ● Connect to the DVR

Hit  to enter option. Input 「IP Addr」 & 「Password」 hit the button connect to start remote access.

#### ● Play from Network

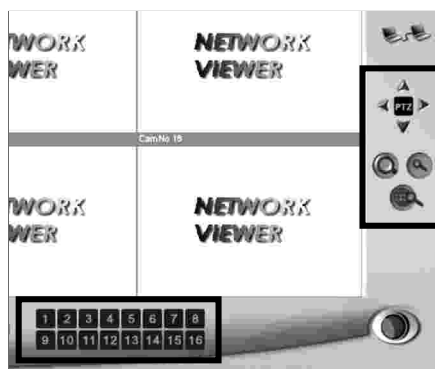
Hit  to start live view. Hit  to stop video stream.  
Hit  to save as AVI. Hit  to save video stream to PC's HDD.  
★ Attention: move the mouse to video display area and click right button




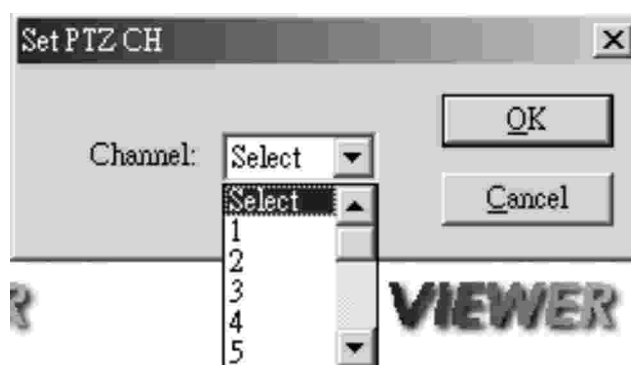
- ➡ can save single or all channels to JPEG files.
- ➡ can print single channel image
- ➡ can restore single or all channels images
- ➡ can display watermark

## ● PTZ









Network Viewer shows up PTZ control in PlayBack mode.



➡ Setup  prior to PTZ control



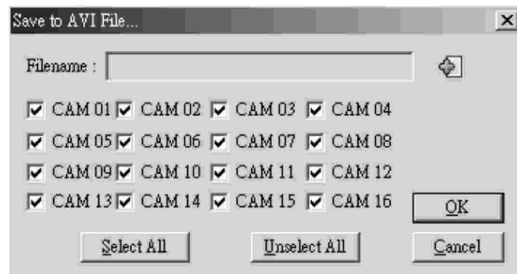
➡ Operation

   	Control Panel UP/DOWN/LEFT/RIGHT
 (Zoom In)	Zoom In
 (Zoom Out)	Zoom Out
 (Auto Pan)	Auto Pan
	Moves to the preset points

✦ Attention: PTZ control only available in DVR V3.07

## ● AVI Backup

Hit to start AVI converting.



Select the channel to be retrieved and select the directory. Hit enter AVI lights up. Hit to stop.

★ Attention: AVI converting requires large system resources. Better hit to backup the video to PC's HDD instead if PC does not support AVI converting.

★ Attention: Bandwidth makes every channel different frame rates outcome. AVI files come out with various speed and audio not available.

★ Attention: AVI Codec must be the same one on playback and converting.

## ● Save Video Stream to PC's HDD

Hit the icon LOCAL lights up accordingly. Hit again to stop.

## ● PlayBack

Hit to start playback.

Can playback video from DVR HDD. Three search modes: 「Select Event List」 、 「Select record List」 、 「Time Search」 。

## ➡ Select Event List

Select HDD → Hit 「Select Event List」



select list → play

### ➡ Select record List

Select HDD→ hit 「Select record List」



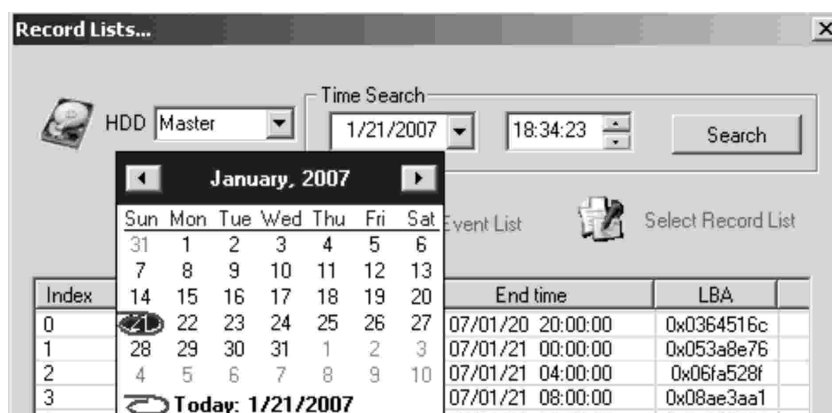
select list → play

### ➡ Time Search

#### 1.Hit Select Record List first



#### 2.Select time/date and hit search



#### 3.System pops up with a message if the search time not in the list range.





4. Wait if search time within the list range.

DVR is searching data ... 8 sec.

5. Can cancel if the search must stop

DVR is searching data ...

Cancel

6. System pops up with a message if search fails.



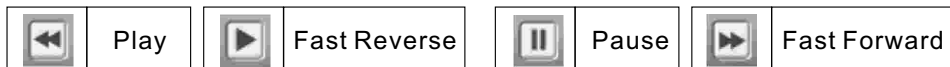
7. DVR starts playback upon search comes to the end.

Hit 「PlayBack」 to start playback



☞ it displays FF/FR speed.

☞ Other function



## ● ScanDisk

Hit for 「ScanDisk」



「ScanDisk」 can read


☞ the HDD from DVR

☞ video files in CD-R

Select the device from downpull option hit to play



## ● FilePlay

Hit  to enter FilePlay.



「FilePlay」 can read

➡ video files from memory stick

➡ video files from PC's HDD



15



## Storage Info

### ● System Info

Hit the button INFO in live mode to review system information: HDD model/capacity/used volume/overwritten times/record list/event list/IP address/firmware version. Background of the used % is to be yellow, that is to say, video is being recorded in master HDD.

	MASTER	SLAVE
HDD MODEL	SAMSUN SV	ST380011A
HDD SIZE	160G	80G
HDD USED	50%	100%
HDD READ		
OVERWRITE	01	00
REC LIST	0085	0047
EVENT LIST	0031	0007
NETWORK IP	192.168.111.222	
S/W VER.	V3.07	

Hit the button INFO in playback mode to review read %. Background of the used % is to be yellow, that is to say, DVR is reading from slave HDD.

	MASTER	SLAVE
HDD MODEL	SAMSUN SV	ST380011A
HDD SIZE	160G	80G
HDD USED	50%	100%
HDD READ		15%
OVERWRITE	01	00
REC LIST	0085	0047
EVENT LIST	0031	0007
NETWORK IP	192.168.111.222	
S/W VER.	V3.07	

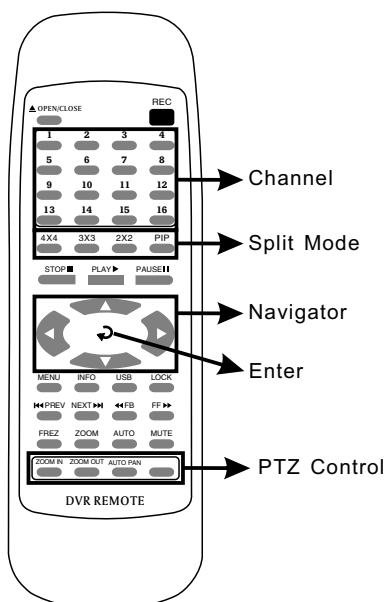
### ● HDD INFO

Hit to enter menu. Select 【Storage Info(8)】 to review HDD information: model/capacity/used volume/overwritten times.

※ Attention : HDD must be formatted before use.

STORAGE INF	
MASTER MODEL :	SAMSUN SV
CAPACITY :	160G
USED SIZE :	50%
OVER WRITE :	01
SLAVE MODEL :	ST380011A
CAPACITY :	80G
USED SIZE :	100%
OVER WRITE :	00
ENTER SET ▲▼◀▶ EXIT	

## 16

**Remote Control**

- **OPEN/CLOSE** : CD Drive
- **REC** : Start/Stop **Recording**
- **Channel** : Single channel display in recording/playback mode.
- **Split Mode** : Various split modes option.
- **STOP** : Hit this button to stop recording/playback.
- **PLAY** : To enter playback menu.
- **PAUSE** : To pause playback. To lockup **keypad** and shut off monitor while recording.  
Need password to unlock.
- **Navigator** : to select option and setting.
- **Enter** : Enter.
- **MENU** : To enter menu. To save the setting and exit..
- **INFO** : To review system information.
- **USB** : Hit this button once to backup movie twice to stop. Snapshot must be in the single channel mode one hit one picture.  
※Attention: System will be in big wrong if user removes memory stick while **A** or **S** on screen display.
- **LOCK** : Hit once for lockup twice for unlock. Password **required** prior to unlock.
- **PREV** : For previous video play.
- **NEXT** : For next video play.
- **FB** : For slow playback speed.
- **FF** : For fast playback speed.
- **FREEZ** : To freeze the single channel display.
- **ZOOM** : To zoom in the images.
- **AUTO** : Quad sequence switch in quad split mode. Single channel sequence switch can setup channel and stay time.
- **MUTE** : Soundless.
- **PTZ** :  
Hit the button on the right hand side to enter PTZ control.  
Hit navigator to control speed dome.  
Hit ZOOM IN & ZOOM OUT To adjust focus.  
Hit AUTO PAN to start scheduled journey.

★Read page 37 for [Password Authorization]



1'st Menu	2'nd Menu	3'rd Menu	Default	1'st Menu	2'nd Menu	3'rd Menu	Default
System Set	Time Set	Date	Not Change	Network Set	IP Addr		Not Change
		Time	Not Change		Gateway		Not Change
		Format	YYYY/MM/DD		Sub Net		Not Change
		Display	ON		IPMode		Static IP
		Local	UP		Network Setup		ON
	HDD Format Set		Not Change		Video Port		5000
	Factory Reset		Not Change		Command Port		5001
	Video System		Not Change		MACAddr		Not Change
	Language		Not Change	Sensor Set	Channel Select		Not Change
	Buzzer Sound		ON		Alarm Enable		N.O.
	Relay Enable		ON		Motion Enable		OFF
	Audio Sound		1111		Motion Level		05
	Change Password	Admin Password Change User Password Change	2222		Motion Area		ON
Display Set	Firmware Update	Interface	Not Change		Buzzer Time		5 seconds
		Start Update	Not Change		Sensor REC Time		10seconds
	Camera Name		Number		Alarm Screen		OFF
	Color Set	CON	50	Schedule Set	1		OFF
		BRI	50		2		OFF
		Hue	50		3		OFF
		SAT	50		4		OFF
	AutoSeq Setup		2 Seconeds	Backup Set	USB Backup	Backup Mode	Movie
	Bound Color		White		Copy PC Application		Not Change
	Blank Color		Blue		CD_RW Backup	USB Information	Not Change
Record Set	Quad Sequence		2 Seconeds	Storage Info			Not Change
	Over Write		Yes	PTZ	Channel Select	Time Setting	Not Change
	REC Speed		60 frame/sec		Protocol	Device ID	OFF
Record Set	REC Quality		03		Baudrate		PEL_CD D
	PB Speed		automatically		Model		2400 bps
	Record Ch Set		ON		PTZ Speed		FUM_626
	Audio Select		OFF				03



18

**Record Time**

Resolution	FPS	Record Quality			
		NTSC			
		04	03	02	01
720 * 240	60	8.8 GB/hr	6.4 GB/hr	4.9 GB/hr	4.2 GB/hr
	30	4.6 GB/hr	3.4 GB/hr	2.9 GB/hr	2.5 GB/hr
	20	2.2 GB/hr	1.6 GB/hr	1.32 GB/hr	1.2 GB/hr
		PAL			
720 * 288	50	8.2 GB/hr	5.8 GB/hr	5.4 GB/hr	4.7 GB/hr
	25	4.0 GB/hr	2.9 GB/hr	2.3 GB/hr	2.0 GB/hr
	12	2.0 GB/hr	1.4 GB/hr	1.2 GB/hr	0.8 GB/hr

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**Password Authorization**

	Admin password	User password	No password
Record	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Live Display	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO
Monitor Lock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO
Keypad Lock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO
Play	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO
Stop	<input checked="" type="checkbox"/>	NO	NO
Menu	<input checked="" type="checkbox"/>	NO	NO
Network	<input checked="" type="checkbox"/>	NO	NO
PTZ	<input checked="" type="checkbox"/>	NO	NO



Brand	NameModel	Size
HITACHI	HDT7225160	160G
HITACHI	HDS724040KLAT80	400G
Maxtor	6Y080L0	80G
Maxtor	6Y120L0	120G
Maxtor	6Y160P0	160G
Maxtor	6L250R0	250G
SAMSUNG	SV1604E	160G
SAMSUNG	SV0802N	80G
Seagate	ST3160023A	160G
Seagate	ST325082A	250G
Seagate	ST3400832A	400G
Western Digital	WD800BB	80G
Western Digital	WD1600BB	160G
Western Digital	WD3200JB	320G

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